Advanced Energy Rebuild Program

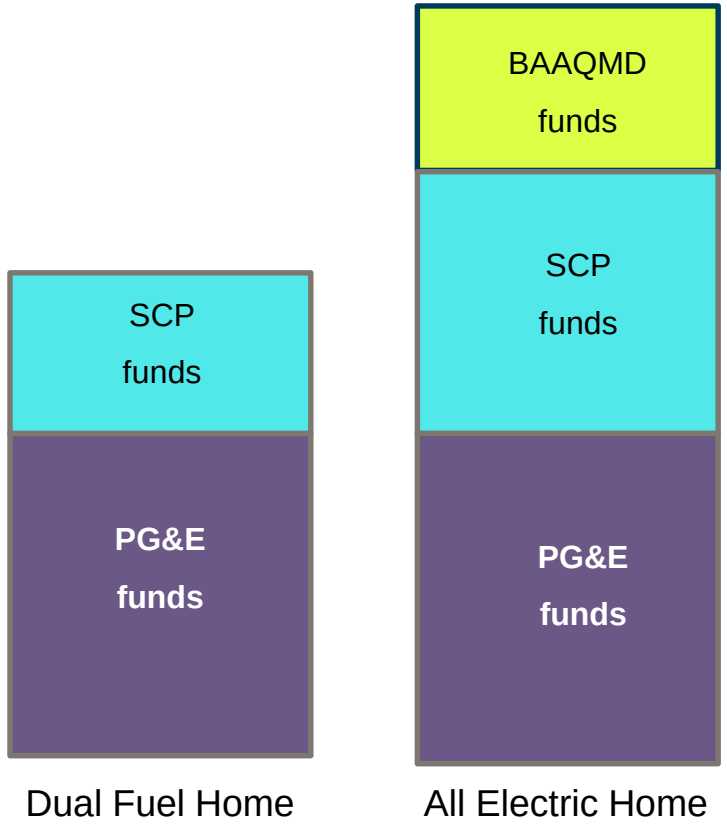
July 2019

Together, Building
a Better California

Advanced Energy Rebuild

Collaboration between Sonoma Clean Power, Pacific Gas and Electric (PG&E) and the Bay Area Air Quality Management District.

-Launched in May 2018.



2019 Bay Area Metro Awards: Grand Award to: ADVANCED ENERGY REBUILD PROGRAM

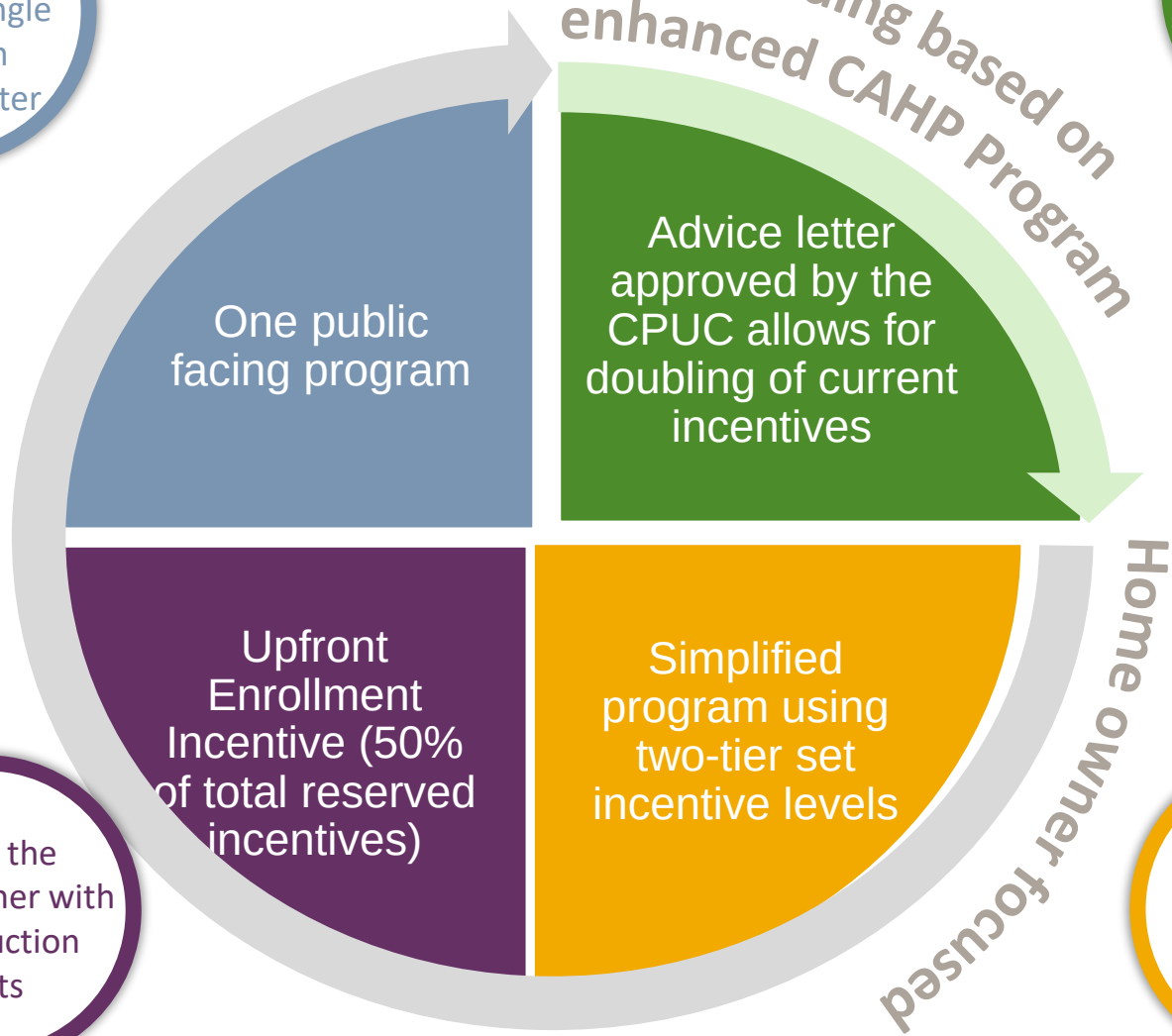
The Bay Area Metro Awards were presented on June 6, 2019, at a ceremony in Oakland recognizing 13 people, projects, organizations and local governments advancing solutions to ease the Bay Area's housing crisis, improve the transportation system or make the nine-county region more resilient.

Collaboration stood out as a key theme for the new awards program since many of the winners were based on effective partnerships: From a team of transit agencies' heroic efforts during the North Bay fires.

Three public transit operators and a public energy program were recognized for their work to save lives, protect communities and aid in rebuilding in response to the October 2017 North Bay fires.

https://mtc.ca.gov/whats-happening/news/special-features/2019-bay-area-metro-award-winners

Program Design



Application processing is through single program implementer

Funding levels determined during plan review and reported to appropriate entity

TRC created a SCP funded escrow account to deliver enrollment incentives with acceptance package

Helps the homeowner with construction costs

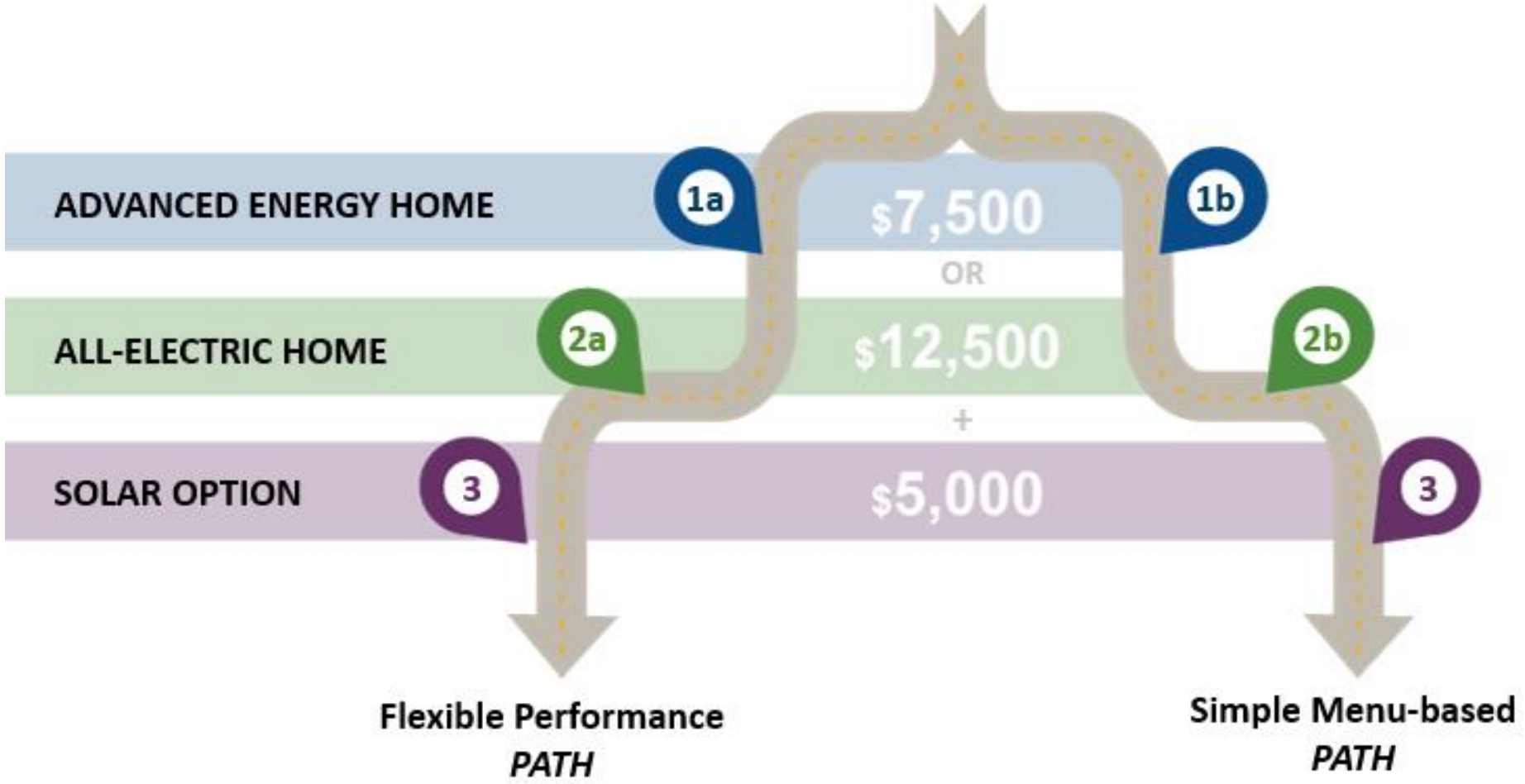
Project processing use existing CAHP infrastructure

Uses the CAHP metric, Delta EDR, to determine PG&E funding levels

SCP pays varying incentive levels to allow for simple two tier system

Simple Bonuses Available

Program Pathways



Pathway 1 – Advanced Energy Home ($7,500)

1 Advanced Energy Home

$7,500

Flexible Performance Path

- 20% above Title 24 energy code
- 220V outlet at stove/range, water heater, and clothes dryer
- Design roof for additional structural loads associated with solar panels, and add conduit for future installation
- Electric Vehicle Charging Station - Equipment free from Sonoma Clean Power

$7,500

Simple Menu-Based Path

- 2016 Title 24 High Performance Walls **or** 2016 Title 24 High Performance Attics (note: unvented attic can qualify)
- 2019 Code windows (Max U-factor 0.30, SHGC 0.23)
- High efficiency water heater: Heat Pump Water Heater w/ EF of 3.0+ **or** gas tankless w/ EF of 0.92 and 220v outlet
- Heating/cooling ducts that are well sealed, insulated (R-8), and located primarily in conditioned space (note: buried ducts as defined by Title 24 can qualify)
- WaterSense efficient plumbing fixtures
- Water efficient landscaping
- Energy Star Appliances
- 220V outlet at stove/range and clothes dryer
- Electric Vehicle Charging Station – Equipment free from Sonoma Clean Power

Pathway 2 – All Electric Home ($12,500)

2 All Electric Home

$12,500

Flexible Performance Path

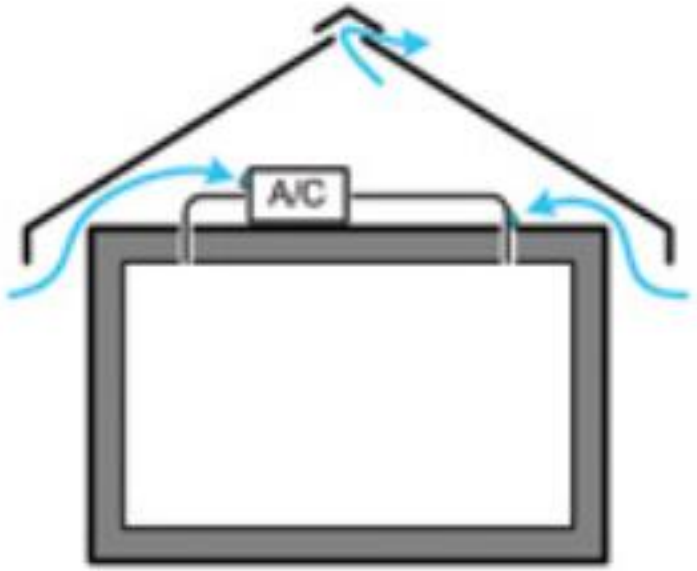
- 20% above Title 24 energy code, all electric end uses
- Design roof for additional structural loads associated with solar panels, and add conduit for future installation
- Electric Vehicle Charging Station - Equipment free from Sonoma Clean Power

$12,500

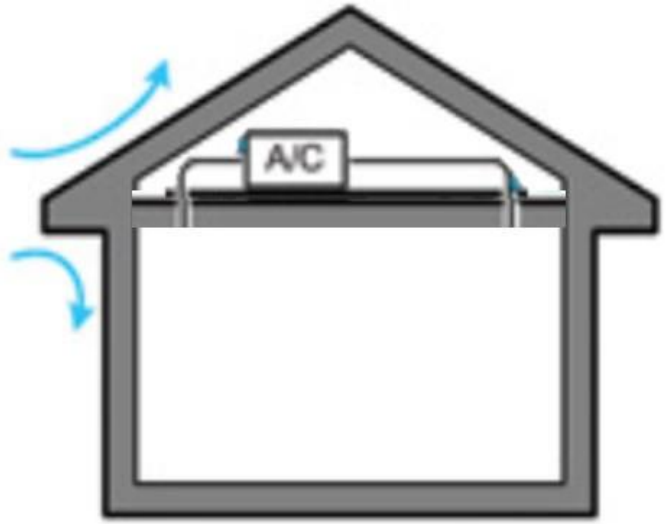
Simple Menu-Based Path

- 2016 Title 24 High Performance Walls
- 2016 Title 24 High Performance Attics (note: unvented attic can qualify)
- Insulation Inspected by a HERS Rater (QII)
- Building Enclosure Airtightness verified by a HERS Rater (less than 3 ACH50)
- "Cool" Roof
- 2019 Title 24 Windows (Max U-factor 0.30, SHGC 0.23)
- NEEA Tier 3 Heat Pump Water Heater w/ grid-integration controls installed
- High efficiency heat pump for heating/cooling (EER of 12.5+, HSPF of 9.5+)
- Heating/cooling ducts that are well sealed, insulated (R-8), and located primarily in conditioned space (note: buried ducts as defined by Title 24 can qualify)
- Smart Thermostat
- WaterSense efficient plumbing fixtures
- Water efficient landscaping
- Induction Cooking
- Energy Star Appliances for all Refrigerators, Dishwashers, Clothes Washers, and Bathroom Fans
- Heat Pump or Electric Clothes Dryer
- Electric Vehicle Charging Station – Equipment free from Sonoma Clean Power

Unvented Attics – Resilient and Efficient



(Conventional) Ventilated Attic



Unventilated Sealed Attic

Accessory Dwelling Units

AER is offering incentives for accessory dwelling units (*not typical for residential new construction programs*)

- First dwelling unit that is rebuilt will receive the full incentive, the second will receive 50% of the total eligible incentive

Additional Program Resources

- Education classes at the North Coast Builder's Exchange
- Certification Courses (and discounts!) for Certified Energy Analysts and HERS Raters
- Induction Cooktop Lending Program

The AER Origin Story

Oct 2017

Both PG&E and SCP were separately working on programs for the affected homes.

Nov/Dec 2017

PG&E and SCP combined efforts.

- Didn't want to compete with each other or confuse home owners.
- Allows for larger incentives, and more efficient, grid-friendly homes.

Jan/Feb 2018

SCP attained additional funding through BAAQMD.

- Funding for GHG reducing technologies (heat pumps, solar + battery).

May 2018

AER program launches.

Roles

PG&E	SCP	BAAQMD	TRC
Resource funding for kWh and therm savings Responsible for program administration cost	Internal funding for GHG reduction Marketing, Outreach, and Recruiting	Funding for specific GHG reducing technologies	Program implementation, design consulting, and project processing infrastructure Stakeholder education (HERS Raters, Energy Consultants, Builders)

AER: A Different Kind of RNC Program

Typical Residential Program	VS	AER Program
Developer owns all the land		Each individual lot has a different homeowner
Entire developments under one application		One home per application
Multiple homes per plan type		One home per plan type
Incentives processed for groups of homes		Individual incentive processing for each home

Production Builder vs. Home Owner

Production Builder	Home Owner
Concerned only about the first costs	Life-cycle cost is a factor
Efficiency is not a motivator	Efficiency/energy savings is a motivator
Wants to meet code as cheaply and easily as possible	Wants best home possible
Does not have to live in the home	Comfort and resilience are major selling points

VS

AER Program Application Statistics

105

Total Applications Submitted

207

Total Homes

104 single family
7 ADUs
96 multifamily

33

All-Electric Applications Submitted

3,246

Total Permits Pulled

6% participating in AER

AER Program Enrollment Statistics

66	161	28	12	31	40
					
Projects Enrolled 65 single family 1 multifamily	**Total Homes** 65 single family & ADUs 96 multifamily	**All-Electric Projects**	**Projects Installing Solar PV + Battery**	**Projects Installing Heat Pump Water Heaters**	**Projects Installing Heat Pump Space Heating**

AER Program Statistics

9,620

Total Enrolled kWh Savings

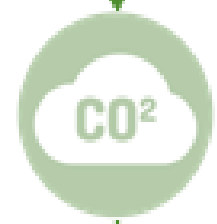
(60 kWh / dwelling unit)

62,780

Total Enrolled Therms Savings

(387 therms / dwelling unit)

340



Total Tons of Enrolled GHG Savings

(2.1 tons / dwelling unit)

$985,000

Total Incentives Reserved

($6118 / dwelling unit)

24.0%

Average T-24 Above Code Compliance

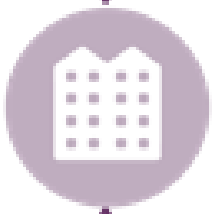
AER Program Average Incentives

$9,615 /home

Single Family Home Average Incentive

BAAQMD: $1,476 /home
PG&E: $3,188 /home
SCP: $ 4,950 /home

$3,750 /unit



Multifamily Unit Average Incentive

PG&E: $920 /unit
SCP:$2,830 /unit

What are Participating Home Owners Saying?

> Thank you so much and thanks for all the work everyone put into this. My family and I are incredibly grateful to be recipients of this program!

> …we look forward to living in our new highly energy efficient home, one that you have helped motivate us to build.

> It's exciting, innovative and good for our environment. I learned a lot about energy efficient choices and I'm really glad I went that way.

> The Advanced Energy Rebuild helped our family reach our goal of designing and building the most efficient home possible. Funds from this program helped offset upgrades in our HVAC system and water heater that would have been extremely difficult to do to otherwise.

Why did you choose not to participate in the Advanced Energy Rebuild program?

+ Not flexible enough. Overemphasis on "electric" versus "green“
+ Can't tell what measures will ultimately lead to rebates until you've made most / all architectural and design decisions.
+ Too many requirements when we were already dealing with way too many things.
+ I was already rebuilding, too many changes needed.

+ Didn’t know if we qualified, didn’t know if we would have the money needed to qualify with certain build features needed, and builder not supportive of the idea.
+ Started but too difficult to work with CEA so stopped.

+ Too expensive and complicated. Current building code provides sufficient insulation.
+ Felt the extra gains were not worth the incentive
+ Although I would have like to participate the cost of meeting the requirements were much more than the incentive to participate particularly given we were underinsured like most people.
+ Not cost effective